Sony International (Europe) GmbH
S30146US

"Multifunctional linker molecules for tuning electronic charge transport through organic-inorganic composite structures and uses thereof"

ABSTRACT

The invention relates to tuned multifunctional linker molecules for charge transport through organic-inorganic composite structures. The problem underlying the present invention is to provide multifunctional linker molecules for tuning the conductivity in nanoparticle-linker assemblies which can be used in the formation of electronic networks and circuits and thin films of nanoparticles. The problem is solved according to the invention by providing a multi-functional linker molecule of the general structure

$$CON_1\text{-}FUNC_1\text{-}X\text{-}FUNC_2\text{-}CON_2$$

in which X is the central body of the molecule, $FUNC_1$ and $FUNC_2$ independently of each other are molecular groups introducing a dipole moment and/or capable of forming intermolecular and/or intramolecular hydrogen bonding networks, and CON_1 and CON_2 independently of each other are molecular groups binding to nanostructured units comprising metal and semiconductor materials.